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ABSTRACT

Zero-base budgeting (ZBB), a systematically structured approach to budgeting, has the potential to improve policy attainment, resource reallocation, program review, and information systems. Some 300 businesses, a dozen states, one municipality, and one school district in the United States have operationalized the concept. Many private and public institutions in Canada are considering ZBB. The purpose of this paper is to provide the conference participant with the critical information regarding adoption of ZBB. Specifically, the paper addresses the following ZBB topical areas: (1) environmental context, (2) historical development, (3) definition, (4) assumptions, (5) managerial underpinning, (6) planning relationships, (7) basic steps, (8) five operational examples including a school district, (9) assessment of the five examples, (10) PPBES/ZBB compatibility, and (11) design and implementation considerations. Improved policy attainment and resource allocation through ZBB have been found to be more effective in a restrained economic environment, a time of competing priorities for scarce resources, and public disenchantment with public programs. As Canadian education is faced with these policy issues, ZBB should be seriously considered by provincial governments and local school districts. (Author)

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ZBB: Zero-Base Budgeting

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TOWARD THE IMPROVEMENT OF THE BUDGETING PROCESS AND POLICY REALIZATION Through Zero-Base Budgeting

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EDUCATIONAL POLICY REALIZATION THROUGH ZERO-BASE BUDGETING. J.L. Myroon, M. Ed, Ph. D. Candidate, Alberta Education, Edmonton, Alberta T5J 2V2

Zero-base budgeting (ZBB), a systematically structured approach to budgeting, has the potential to improve policy attainment, resource reallocation, program review and information systems. Some 300 businesses, a dozen states, one municipality and one school district in the United States have operationalized the concept. Many private and public institutions in Canada are considering ZBB. Consequently, it is appropriate for Canadian school officials to acquaint themselves with ZBB. The purpose of this paper, therefore, it to provide the conference participant with the critical information regarding adoption of ZBB. Specifically, the paper addresses the following ZBB topical areas: (1) environmental context, (2) historical development, (3) definition, (4) assumptions, (5) managerial underpinning, (6) planning relationships, (7) basic steps, (8) five operational examples including a school district, (9) assessment of the 5 examples, (10) PPBES/ZBB compatibility, and (11) design and implementation considerations. Improved policy attainment and resource allocation through ZBB have been found to be more effective in a restrained economic environment, a time of competing priorities for scarce resources, and public disenchantment with public programs. As Canadian education is faced with these policy issues, ZBB should be seriously considered by provincial governments and local school districts.

TOWARD THE IMPROVEMENT OF THE BUDGETING PROCESS AND POLICY REALIZATION THROUGH ZERO-BASE BUDGETING

Introduction

Zero-base budgeting (ZBB), a systematically structured approach to budgeting, has the potential to improve policy attainment, resource reallocation, program review and information systems. At present the concept of ZBB is catching on fast in North American industry and government. ZBB, writes Phyrr (1977:1) is an "...emerging process, which has been adopted by a variety of industrial organizations in many sectors of the economy, as well as state and local governments." In the United States some 300 businesses, a dozen state governments and at least one municipality and three school jurisdictions (Greece, N.Y.; Memphis, Tennessee, and Marrimac, N.H.) are utilizing the concept. In British Columbia, "Zero base budgeting (ZBB) will be introduced in the 1979-80 fiscal year for three provincial government ministries" (Edmonton Journal, March 1, 1978:A23). The Calgary Public School District #19 is implementing ZBB fully in 1980 - some ZBB modifications are being introduced in 1979-80. McMaster University in Hamilton introduced ZBB in the 1975-76 fiscal year. Further, the Royal Bank of Canada, Westinghouse Canada Ltd., The City of Hamilton, The Bank of Montreal, and North York General Hospital have introduced ZBB. The Government of Canada and the Ontario Provincial government have established task forces to study ZBB with the view of implementation. Because of this sweeping use of ZBB, many organizations in Canada and the U.S. are considering some form of implementation. This being the case, then it is appropriate for educational middle and top management to thoroughly acquaint themselves with the ZBB concept.

Improved policy attainment and resource allocation through ZBB have been found to be more effective in a restrained economic environment, a time of competing priorities for scarce resources, and public disenchantment with public programs. As Canadian education is faced with these policy issues, ZBB should be seriously considered by provincial and local school governments.

The purpose of this paper, therefore, is to provide the reader and/or listener with critical types of information concerning ZBB so that a wise judgement could be made as to whether ZBB or some of its aspects should be considered for implementation. Hence this paper attempts to answer the kinds of questions that would be asked by an educational manager who was considering ZBB:

1. Is ZBB legitimate, is it a hoax or is it merely an innocent passing fancy?
2. Is ZBB best suited for a particular kind of environmental condition?
3. What has been the history of its development to date?
4. What is meant by ZBB?
5. What are its underlying assumptions?
6. Is it management based?
7. Where does planning fit?
8. What are the basic steps or components?
9. How has ZBB been operationalized?
10. What are the pros and cons and how does it stack up in assessment?
11. How would one design and implement ZBB?
12. Are PPBES and ZBB compatible?
13. Should ZBB be considered by Canadian school authorities?

Three Views of ZBB: Legitimate Technique, Hoax or Merely a Passing Fancy

While many writers are exhorting ZBB to be the most significant and powerful budgeting technique ever (Bergeron, 1978; McFarlane, 1977; Tourangeau, 1977; Carter, 1977; of course, Phyrr; to name a few), a few writers like Cornish (1978), Weischadle (1977), O'Neil and Manceri (1977) and Wildavsky (1973) are expressing cautious optimism about ZBB. On the other hand, Anthony, writing in the December, 1977 issue of Accountants Digest has claimed ZBB to be a fraud. Anthony (1977:83) argues that if the Federal Trade Commission looked at ZBB in terms of false and misleading advertising there would be a "...prima facie case that the term zero-base budgeting is fraudulent."

Irrespective of the hoax-legitimacy argument, ZBB could be identified as merely another bandwagon and banner that has joined the reform parade of management innovations; many of which are passing fancies and some of which have lasting impressions. Which is ZBB?

It appears that the selling of new ideas in North America must be done on an over-zealous basis--perhaps the most severe chronic problem of public administration. In order to market an innovation, we believe it must be oversold; thereby increasing the chances of demise due to inflated expectations. ZBB, claims Shick (1977:12) "advertises itself as a technique for deciding every budget item from point zero, as if a government's past had no bearing on the future." Is ZBB being oversold? Can it meet its promises? Only the future can actually provide these answers. In the U.S. a symbiotic rival to ZBB is sunset legislation; sunset legislation establishes a date on which the statutory authority for a program or agency automatically expires unless it is re-enacted. Will we jump on the ZBB and/or sunset legislation bandwagon when the "hoopla" parade marches by?

Which is ZBB? Is it a legitimately new and powerful budgeting technique? Is it a hoax or fraud being perpetrated? Or is it merely and simply an innocent passing fancy? Perhaps the contents of this paper might help you decide.

CONTEXTUAL SCENERIO OF ENVIRONMENTAL NEED AND BANDWAGONS

ZBB is a product of the 1970's; a decade that has been marked by tight fiscal constraints and budgets as well as widespread disillusionment about the effectiveness of government programs. Public budgeting is greatly influenced by national economic conditions. When Governor Carter entered office in Georgia in 1970 the departmental funding requests amounted to more than twice the amount of financial resources that were available. As well, he realized that no one had made any attempt to arrange

any of the requests in order of priority. To him the answer was ZBB. In 1977 President Carter was faced with difficult budget decisions at a time of a tight economy; and again the reaction of Carter was to call upon ZBB as the budgeting approach that would assist him in making rational and systematic budgetary decisions. As Lynch (1977:3) recently observed, "A budget technique, which is inherently critical, is a welcome tool for a president faced with a need to hold the line or cut programs. Further, ZBB was implemented at McMaster University because it was deemed that ZBB would "...help cut down expenditures to affordable levels while still continuing to improve their performance (MacFarlane; 1977:28). The need to"cut down" expenditures, according to MacFarlane was because of unstable economic conditions, increasing shortage of funds and intense inflationary pressures (1977:28). Tourangeau (1977) adds that ZBB is publically being demanded because of public "discontent with government efficiency". Hence, it can be concluded that ZBB is a budgeting approach that seems to be welcomed at a time of tight economic conditions and public concern about government programs and spending, as summarized more completely below:

1. decreasing productivity or growth
2. high inflation
3. increasing unemployment
4. demand for new programs
5. public aversion to tax and expenditure increases
6. high fixed expenses
7. union battles and high settlements
8. taxpayer perceptions that government is big, ineffective, inefficient and wasteful, and
9. increasing shortage of funds

It is interesting to note that the economic picture in Canada in late 1977 was: $9 billion federal budget deficit; 8.3% unemployment; 8.4% inflation rate; economic growth rate of only 2%; and a rapidly declining dollar (Edmonton Journal, October 22, 1977:4). Since that date, the economic scene has become more dismal.

Finally, the advocates of ZBB argue that when these identified environmental conditions are prevalent, ZBB is the answer because it focuses on the following two questions:

1. Are the current activities efficient and effective?
2. Should current activities be eliminated or reduced to fund high-priority new programs or to reduce the current budget? (Pyhrr, 1971:1).

HISTORICAL DEVELOPMENT: GESTATION, ABORTION, BIRTH OR REINCARNATION AND INFANCY

ZBB, wrote Jimmy Carter in January of 1977 (Carter, 1977:24), "has had a rather long gestation period and brief infancy." In this writers view there has also been one abortion or stillbirth and a birth (or perhaps reincarnation). ZBB, through its long gestation period has drawn upon a large number of innovative management techniques developed during the 1960's (as does the fetus in the uterus from conception to birth). Genetically, then, the parts of the ZBB "baby" came from the various strains of evolving management techniques; the organizational environments provided the uterus; the progressive managers conceived of the idea, (yet it was a virgin birth), in 1964 there was an abortion, and finally in 1970 ZBB was born or reincarnated. In essence, then, ZBB simply represents an evolutionary step in the sophistication and development of the management process. For example, ZBB has drawn on

systems theory and analysis, problem-solving techniques, cost-benefit analysis, PPBES, and program management to name a few. Lynch (1977:4), writing in the spring 1977 issue of "Bureaucrat", observed that "...one is stuck by the parallel between the federal PPB and the Georgia ZBB experiences." Hence ZBB is not a shiny newly-invented approach, rather it represents a "putting-together" of many parts through a fairly long gestation period. It can be considered as an extension of PPBES.

Now for the abortion. One of the earliest ZBB efforts was in the U.S. Department of Agriculture some fourteen years ago (Schick, 1977:13). The secretary of agriculture in April, 1964 had directed his staff to prepare a ZBB; instructions stated "that all programs will be reviewed from the ground up and not merely in terms of changes proposed for the budget year." Secretary Freeman, once Governor of Minnesota, and Budget Director Bell wanted a "comprehensive" budget that would justify from "zero" the funding for each program (Wildavsky, 1975:281). This early approach to ZBB was froth with "birth pains", and hence was abhorted because:

1. no special ZBB techniques were introduced,
2. ZBB was only an internal and therefore additional exercise for conventional budgets had to be submitted to the Bureau of the Budget and Congress,
3. the ZBB documents were voluminous,
4. a great deal more time than normal was expended,
5. involved personnel were motivated by fidelity to the secretary's directive rather than by a genuine search for wayward or wasteful programs, and

6. in the end, it was difficult to identify any significant budget outcomes which were different because of ZBB.

One agriculture official summed up the exercise by stating: "SOME BUTTERFLIES WERE CAUGHT, NO ELEPHANTS STOPPED." The interesting thing about this aborted attempt at ZBB is that departmental people were generally satisfied with the ZBB endeavors (Schick, 1977:14). The reasons for their satisfaction stemmed from:

1. they gained a fuller understanding of what the organization was doing, and
2. a new justification for what they were doing.

As a result, it could be stated that while ZBB was not good for the budget, it was nevertheless good for the soul.

The birth or perhaps the reincarnation of ZBB occured in 1970 when Phyrr implemented the present version of ZBB in Texas Instruments (Phyrr has most recently been vice president, finance, and also treasurer of Alpha Wire Corporation; now he heads up his own consulting firm). ZBB was initially implemented in 1970 in all the Staff and Research departments through a team effort and because of its success, was implemented throughout all departments of Texas Instruments in 1971. Phyrr subsequently left Texas Instruments to help install ZBB for Governor Carter and as a result, ZBB was used to develop the entire executive budget recommendation for the State of Georgia for the 1973 fiscal year (July 1972 to June 1973). Since then, as stated earlier, over 300 businesses, a dozen states and some municipal and school governments have implemented ZBB in U.S. Many have followed suit in Canada. The municipal government of Wilmington, Delaware, a municipality of a resident population of 80,000 and a 1976 operating budget of $34.8 million

implemented ZBB in 1976. As well, the Greece Central School District in New York, has established an alternatives based budgeting system called SCAT (School Cost Analysis Team) which uses ZBB as one of SCAT's basic principle's. Greece used all of the components of ZBB except one; early indications suggest satisfaction with the system. Greece has an operating budget of about $30 million (1976), a pupil population of 13,000 and a staff of around 1,150. Finally, Calgary Public School Board #19 is considering the implementation of ZBB.

DEFINITION OF ZBB

Zero-based budgeting as a concept is not new. In the previous "historical development" section of this paper it was established that there was an "aborted birth" of ZBB in 1964 (US Department of Agriculture) and a healthy live-birth, or perhaps reincarnation of ZBB in 1970 (Texas Instruments). The definition of ZBB differs with these two historical periods.

In the first instance the ZBB implementors adopted the prescriptive conceptual approach. In the most literal sense, stated Taylor (1977:33), "ZBB implies constructing a budget without any reference to what has gone before, based on a fundamental reappraisal of purposes, methods and resources". The initial view, exhorts Phyrr (1977:7) is the belief that ZBB means "the process of throwing everything out and starting all over again from scratch or reinventing the wheel." Taylor goes on to observe that this literal interpretation can be "...roundly condemned as naive and impractical, if not downright mischievous". Phyrr (1977:7) adds that this connotation means "chaos". Such was the case of the FY 1964 experience in the US Department of Agriculture. Taylor (1977:33) provides two analogies that further indicate the initial impracticality of ZBB: (1) even teenagers do not have identify crises every

year, and (2) a country could not have a foreign policy if it pulled the policy up every year in order to examine its roots.

The second version of ZBB, i.e., the reincarnated or perhaps the healthy live-birth version, is a practical approach; it assumes that each program, unless specifically identified, will continue at the basic minimal support level. What happens under this view is that budget analysis and decision making concentrates on the support levels beyond the minimal level. Generally this definition of ZBB may be stated as the detailed identification and evaluation of all/most/some activities, programs, alternatives, and costs to achieve plans through the use of a zero base, which generally accepts the minimal funding level as the starting point. Peter Phyrr, the major advocate and father of the reincarnated version of ZBB, defines ZBB as:

> "The process which requires each manager to justify his entire budget request in detail, and puts the burden of proof on him to justify why he should spend any money. Each manager must prepare a "decision package" for each activity or operation, and this package includes an analysis of cost, purpose, alternative courses of action, measures of performance, consequences of performing the activity, and benefits. The analysis of alternatives as required by zero-base budgeting introduces a new concept to typical budgeting techniques. Managers must first identify different ways of performing each activity--such as centralizing versus decentralizing operations, or evaluating the economy of in-house print shops versus commercial printers. In addition, zero-based budgeting requires that managers identify different levels of effort for performing each activity. They must identify a minimum level of spending--often about 75% of their current operating level--and then identify in separate decision packages the costs and benefits of additional levels of spending for that activity. This analysis forces every manager to consider and evaluate a level of spending lower than his current operating level; gives management the alternative of eliminating an activity or choosing from several levels of effort; and allows tremendous trade-offs and shifts in expenditure levels among organizational units.

Phyrr is saying that ZBB implies the following:

1. Every expenditure is examined afresh each specified budget period (vary from one to five years), using a "minimum" support level as the base.
2. Each expenditure has to be justified in the light of current needs.
3. Instead of setting the budget figures in terms of increases or decreases from the previous year's budget, one starts from the zero-base line each time (minimum level) justifying the first dollar as well as the last.
4. All programs will be evaluated and reviewed systematically.
5. Activities will be reviewed on an output or performance basis as well as cost.
6. Burden of proof is transferred to the manager.
7. Analysis is increased for ZBB means that different ways of performing each activity must be identified.
8. Different levels of effort ($) for performing each activity must be identified (zero-base).

This practical approach to ZBB, claims Phyrr (1977:7) may occasionally lead an organization to completely rethink and redirect a program, in which case everything could be thrown out and started all over again. However, in the majority of cases, programs will continue but with modifications and improvements. Further, the analysis in the great majority of cases will concentrate on evaluating program efficiency and effectiveness as well as the evolution and priorization of different levels of support. This is truly a flexible approach to budget decision making (Phyrr, 1977:7)

ASSUMPTIONS AND PHILOSOPHICAL UNDERPINNINGS

The distinctive and essential feature of ZBB is its focus on the total budget request (Taylor, 1977:35). That is, the current level of program spending is not immune from detailed scrutiny. In incremental budgeting the question is: At the margin, is an increment in program A more important than an increment in program B or C ? As a result, the top decision makers are forced to (1) accept a program increment, (2) reduce it, or (3) reject it. ZBB offers the decision makers a range of choices and trade-offs among alternate funding levels, and the question then is: At the margin, is an increment (i,ii,iii, or iv) in program A more important than an increment (i,ii, iii, or iv) in B, or an increment (i or ii) in C or an increment in any other program, as illustrated in Figure 1.

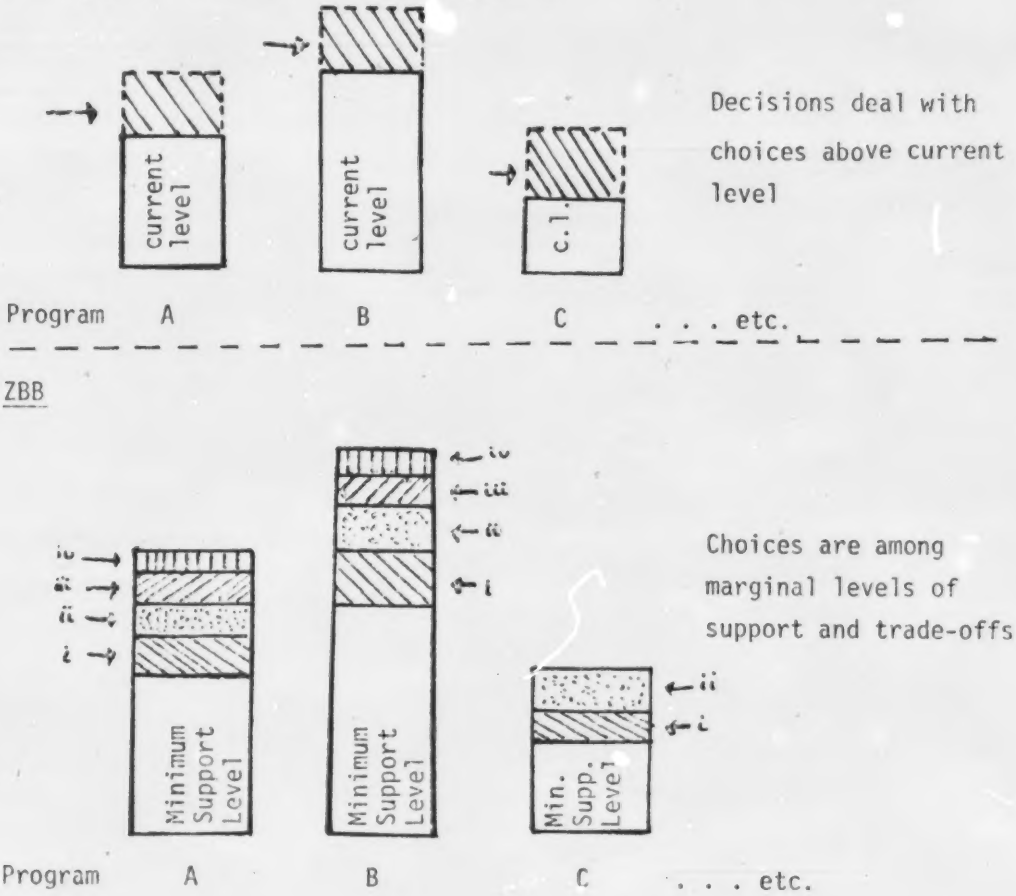


Figure 1: ZBB/Incremental Budgeting Distinctions, Especially in Relation to "Trade-offs."

ZBB, then, functions on the following assumptions:

1. Major assumption: There are resources available within the existing budget that could be logically reallocated so as to improve program effectiveness, efficiency and economy.
2. Supporting assumptions
   a. all present programs need not necessarily be continued
   b. there are activities that may have outlived their usefulness
   c. there may be programs/activities that no longer relate to management objectives nor overall departmental/organizational policies.

ZBB is management based in its underlying philosophical underpinning. The outcome of the "reallocation" assumption is increased flexibility and discretion for top level decision makers in the utilization of present and future resources. ZBB is designed, avers Broadnox (1977:58), "to force managers at each level within an organization to critically and analytically review and justify each activity and program." Under a ZBB approach, managers are forced to budget at various spending levels and as a result they are then further forced to compare activities and programs. The result is increased top management flexibility and discretion in the final allocation of available scarce resources. In essence, then, perceived flexibility of lower management is transferred to the top (Broadnox, 1977:59). In a school jurisdiction this increased discretion is resident with the secretary-treasurer, superintendent and board.

PLANNING-BUDGETING DISTINCTION OF ZBB

Some have suggested that ZBB is a misnomer; it should more appropriately be called "zero-base planning" or as is PPBES, be called "zero-base planning

and budgeting", since ZBB requires a great deal of effective planning. However, the advocates of ZBB argue that planning is not a part of ZBB, instead planning is a prerequisite. For example, Broadnox (1977:59) states that planning and budgeting are "sequential as opposed to parallel phasing of planning and budgeting" Phyrr (1973:2) makes the distinction clear; he states that "planning identifies the output desired" while "Budgeting identifies the input required." The following two figures display the intended distinction well:

Figure 2: General Planning/ZBB Relationship (Phyrr, 1973:4)

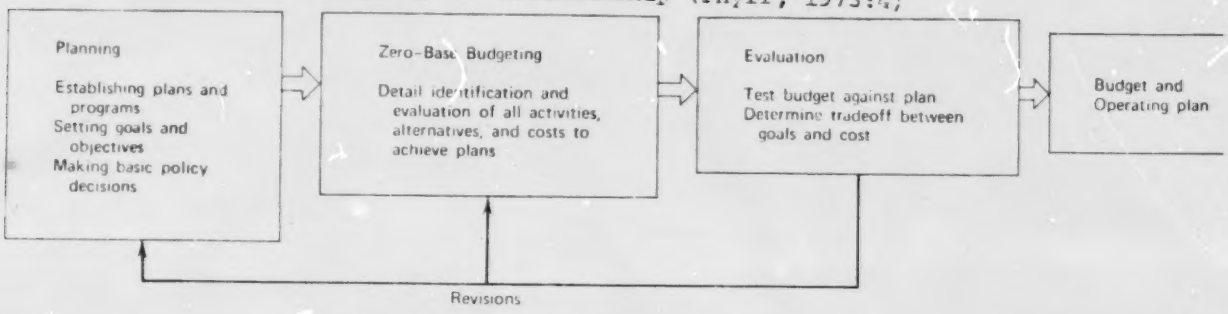
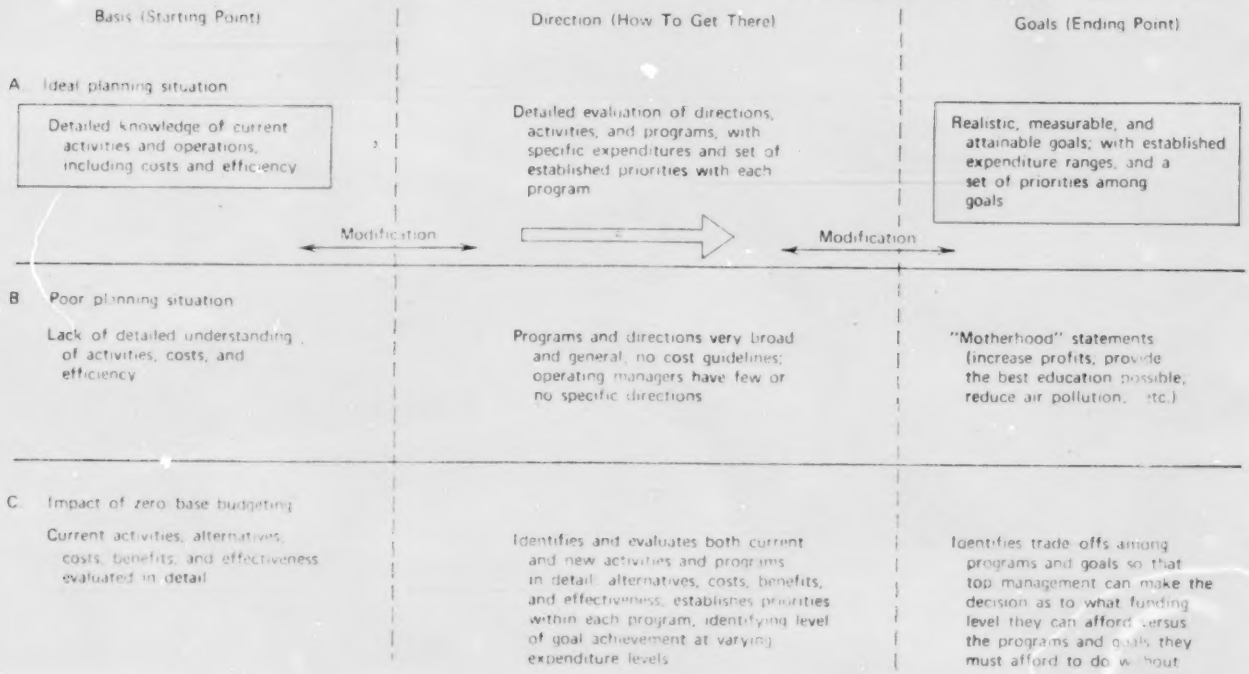

Planning
Establishing plans and programs
Setting goals and objectives
Making basic policy decisions
Zero-Base Budgeting
Detail identification and evaluation of all activities, alternatives, and costs to achieve plans
Evaluation
Test budget against plan
Determine tradeoff between goals and cost
Budget and Operating plan
Revisions

Figure 3: Different Levels of Planning and Budgeting (Phyrr, 1973:4)


Basis (Starting Point)
Direction (How To Get There)
Goals (Ending Point)
A Ideal planning situation
Detailed knowledge of current activities and operations, including costs and efficiency
Detailed evaluation of directions, activities, and programs, with specific expenditures and set of established priorities with each program
Realistic, measurable, and attainable goals; with established expenditure ranges, and a set of priorities among goals
Modification
Modification
B Poor planning situation
Lack of detailed understanding of activities, costs, and efficiency
Programs and directions very broad and general, no cost guidelines; operating managers have few or no specific directions
"Motherhood" statements (increase profits, provide the best education possible, reduce air pollution, etc.)
C Impact of zero base budgeting
Current activities, alternatives, costs, benefits, and effectiveness evaluated in detail
Identifies and evaluates both current and new activities and programs in detail; alternatives, costs, benefits, and effectiveness; establishes priorities within each program, identifying level of goal achievement at varying expenditure levels
Identifies trade offs among programs and goals so that top management can make the decision as to what funding level they can afford versus the programs and goals they must afford to do without

BASIC STEPS OF ZBB

Although the specifics of ZBB differs from organization to organization, these are four basic steps which must be addressed (Phyrr, 1977:2):

a. Identification of "Decision Units" (D.U.)

b. Formulation of "Decision Packages" as a result of analysis of decision units. (D.P.)

c. Evaluation and ranking of all decision packages to develop the appropriations request, and

d. Preparation of the detailed operating budget reflecting the approved decision packages.

1. Defining the "Decision Units"

Since ZBB attempts to focus management's attention on evaluating activities and making decisions the meaningful elements of each organization must be accordingly defined. Generally, decision units "are the lowest-level entities for which budgets are prepared: (Taylor, 1977:36)

The definition of decision units in most organizations is usually straightforward--they could correspond to the budget units defined by traditional budget procedures. If an organization has a program structure, the decision unit could be the function, program, sub-program or element/activity, as in Alberta's PAB program structure. One usual requirement is that each decision unit have an identifiable manager with the necessary authority to establish priorities and prepare budgets for all activities within the given decision unit. Decision units could be cost centers, responsibility centers, capital projects, special projects, etc.. Each organization must decide what "is meaningful." The responsibility structure is generally the key to selecting decision units ; i.e., decision units should reflect or be parallel to the

flow of responsibility for budgetary decision making. Size of the organization is also a consideration. The right answer to defining a decision unit claims Phyrr (1977:19) is "whatever makes sense".

2. Decision Packages

The decision package is the building block of ZBB. The decision package is an analysis of each discrete function or operation (decision unit) in such a way that management can:

a. evaluate it and rank it against other decision units competing for funding, and

b. decide whether to approve it or disapprove it (Phyrr, (1977:3).

A decision package is defined as only one incremental funding level in a decision unit. Hence, each decision unit would have several decision packages. A series of decision packages for a decision unit would together equal the sum total of the budget request for the decision unit, as illustrated below:

Level 5 (D.P. 5 of 5)	Ideal Level	o blue sky
Level 4 (D.P. 4 of 5)	Expanded	o preferable/desirable
Level 3 (D.P. 3 of 5)	Current Level	o maintenance/existing
Level 2 (D.P. 2 of 5)	Minimum to Existing	o some reduction
Level 1 (D.P. 1 of 5)	Minimum Level	o maximum reduction

Since management must make decisions regarding each decision unit, the content and format of the decision package is critical. Each incremental level of funding (i.e., each decision package) could include, (note similarity to PPBES) among others:

a. purpose/objectives

b. description of actions or services to be provided

   - what is going to be done

   - how to be done

c. costs, expected benefits and outcomes

d. workload and performance measures

e. alternative means of accomplishment and analysis of each, and

f. consequences of not performing activity.

The comprehensiveness of the above information is a decision point within an organization; however, the considerations of time, practicality, and available analytical skills are important. The choices could vary from year to year; one year could emphasize a fundamental reexamination of all decision units or only a select few or one; or it could be perfunctory.

Some additional useful statements regarding decision packages are:

a. Each decision package consists of a discrete set of services, activities or expenditure items (each set is exclusive).

b. The first or highest order priority package usually addresses the most important activities performed by the decision unit. i.e., those which meet the most critical needs of the target population or those which produce the highest priority service.

c. The first package is considered the minimal level of effort or service level; if funding were below, the unit might as well be

eliminated; it is also the minimal required by law.

d. There is a variety of ways of arriving at the minimum level.

(i) open, ie. no minimal level set except that it cost less than the current level of spending, or

(ii) set from the top as a discrete unit or percent less than the current funding level, i.e. it is fixed.

e. Number of packages vary from (generally) three to ten.

f. Typically, packages get smaller and more discrete as the cumulative total nears and exceeds the current spending level.

g. Decision packages are ranked.

h. The dollar value of spending level is cumulated commencing with priority number one on to the last.

i. The information per package is usually on a prescribed set of forms--content of which given earlier.

j. Cumulative cost sometimes expressed as a percentage of last year's total for the unit.

k. Cost, object class and demographic data requirements vary.

l. The minimum level package should identify the chosen alternative (packages 2, 3 and on would show increments of the same alternative). As well the rejected alternatives with their costs should be shown--so that the decision makers could choose an alternative other than the one recommended.

Since the minimal level of effort decision package is the most difficult level to identify, Phyrr (1977:4) has provided some suggestions for consideration:

a. The minimum level may not completely achieve the total objective of the operation (even the additional levels of effort recommended

may not completely achieve the objective because of unrealistic budget and/or achievement levels).

b. The minimum level should address itself to the most critical population being served or attack the most serious problem areas.

c. The minimum level may merely reduce the amount of service (or number of services) provided.

d. The minimum level may reflect operating improvements, organizational changes, or improvements in efficiency that result in cost reduction.

e. Combinations of 1 through 5.

The submission of a series of decision packages per decision unit offers top management real discretion and flexibility in budgetary decision making because all the following decisions are possible:

a. elimination (all packages rejected)

b. reduction (accept minimum plus one or two)

c. maintenance (accept all those to minimum)

d. increase (all or some packages above present accepted).

3. The Ranking Process

Ranking is the process where an upper level manager evaluates and reviews all decision packages (for those reporting to him) and establishes their relative priority. This process provides management with a technique to allocate scarce and limited resources by concentrating on the following two questions (Phyrr, 1973:78):

a. How much should we spend?

b. Where should we spend it?

The ranking process usually involves:

a. preparation of a ranking table by listing all individual and

discrete decision packages in descending order of priority,

b. developing a running cumulative total using the sum (incremental) of each decision package,

c. the individual manager or review committee then assess each by identifying the benefits to be found at each level of expenditure and the consequences of rejection,

d. attention is usually concentrated on those packages that fall within a reasonable range around a likely cut-off point, ex., if there are 40 packages, then the precise priority of the top few and bottom few may not be necessary--those that fall close to the probable cut-off line must be closely examined,

e. ranked decision packages should be consolidated into a smaller number of executive summaries or "superpackages" before submission for review and ranking by a higher level of management, and

f. the key to effective review by top management is to focus their attention on key policy issues and discretionary expenditures.

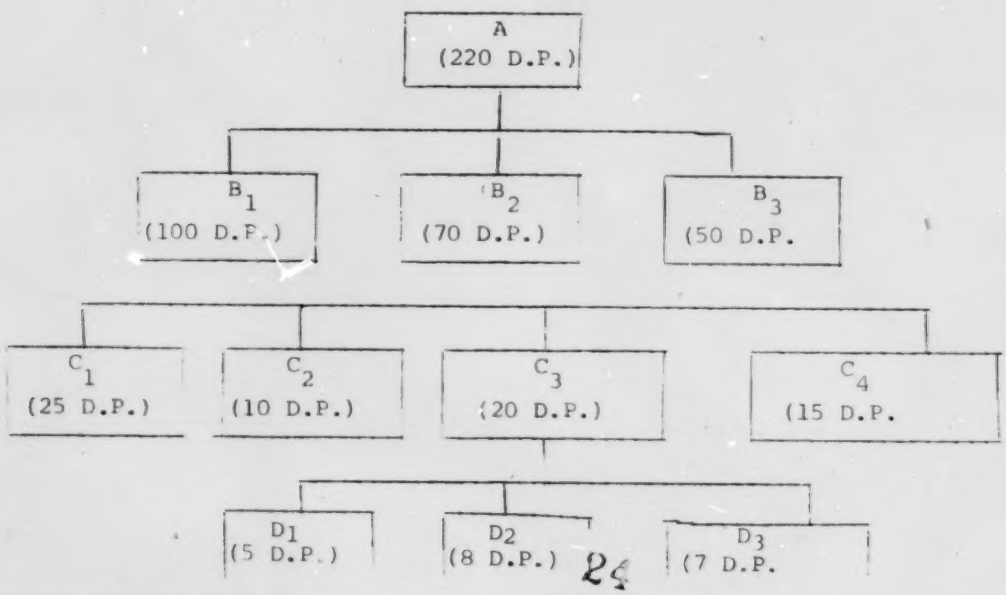
By having a priority listing of all decision packages (typical ranking form identifies decision unit, decision package number, increment of required resources, manpower requirement and cumulative total), top management can decide how much money should be spent and must also determine the cut-off level of funding,(packages below 65 will not be funded)(Phyrr, 1973:78). Figure 4 illustrates a summary ranking of a series of decision packages:

FIGURE 4: SAMPLE OF HOW A ZBB RANKING MIGHT APPEAR

Rank	Decision Package and Numbers	Incremental Cost	Cumulative Program Cost
1	Reviews and Permits (1 of 2)	$116,000	$116,000
2	Source Evaluation (1 of 4)	103,000	219,000
3	Air Quality Laboratory (1 of 3)	140,000	359,000
4	Registration (1 of 3)	273,000	632,000
5	Source Evaluation (2 of 4)	53,000	685,000
6	Air Quality Laboratory (2 of 3)	61,000	746,000
7	Source Evaluation (3 of 4)	45,000	791,000
8	Air Quality Laboratory (3 of 3)	45,000	836,000
9	Reviews and Permits (2 of 2)	50,000	886,000
10	Research (1 Of 2)	85,000	971,000
etc.			

The initial ranking should occur at the organizational level where the packages were initially developed so that each manager could assess the value of his own activities and rank them accordingly (Phyrr, 1973:15). In turn, the next upper level manager reviews the rankings of each decision unit and uses these to develop a new single, consolidated ranking for all the packages presented to him from the next lower level. The upward flow and consolidation continues as illustrated by Figure 5 below:

Figure 5: Rank Ordering of Decision Packages by the Lowest and Subsequent Levels.



As can be seen the volume of decision packages in a large organization could create a paper-blizzard and time requirement a "night-mare". Phyrr (1973:82) identifies two ways to overcome the volume obstacle:

a. concentrate top level reviews on lower priority or discretionary packages around which the funding level or cut-off will be effected.

b. limiting the number of consolidation levels to which the packages will be combined.

In terms of the first means, a cut-off expenditure level, expressed as a percentage of current year budget or absolute dollars could be used at each sucessive level within the hierarchy (the cut-off should not use number of decision packages as the criteria). However, the packages below the cut-off should still be listed and displayed at each successive level. The cut-off levels should be below the expected funding level in order to allow for real trade-offs, and identifying the least important packages within the level. Figures 6 and 7, below, illustrate the limiting cut-off approach:

Figure 6: Use of Funding Cut-offs to Limit the Number of Decision Packages per Consolidation Level. (Phyrr, 1973:83)

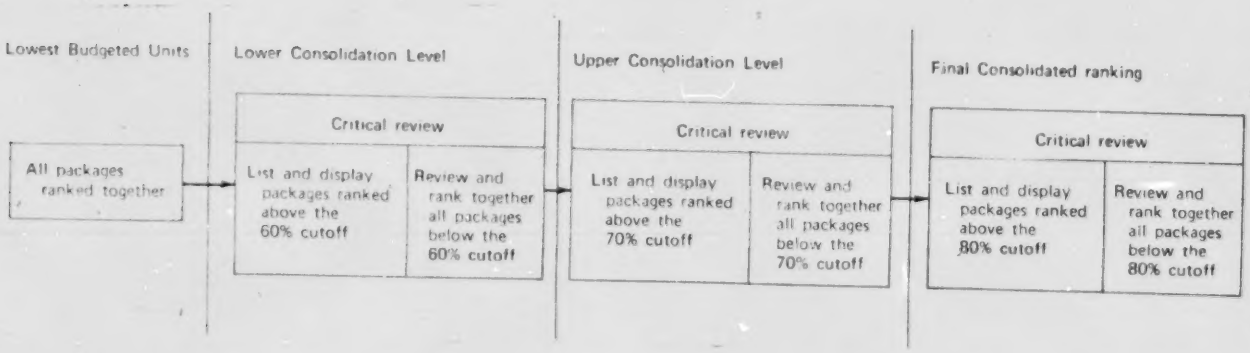
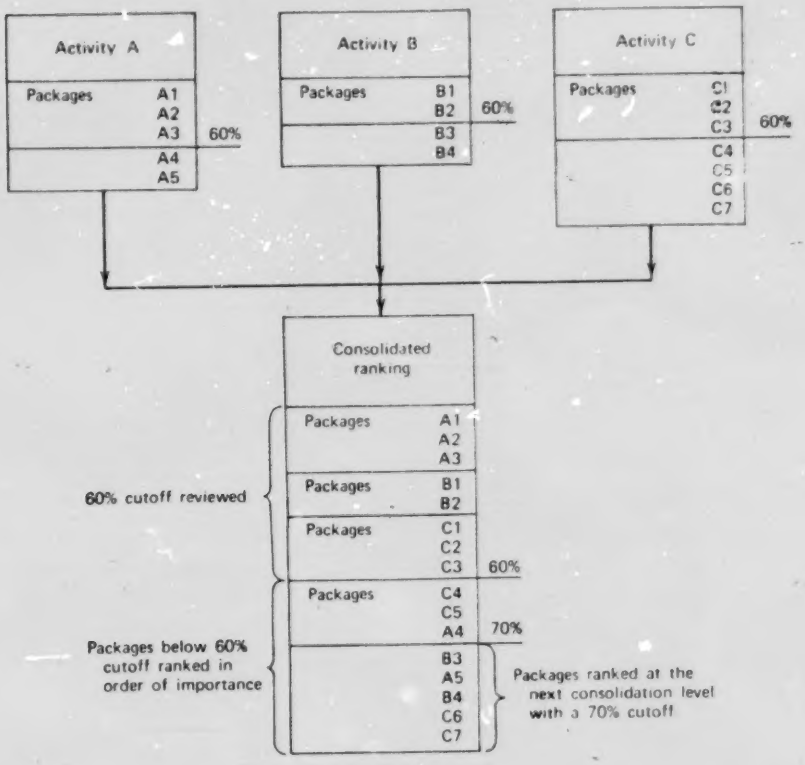

Lowest Budgeted Units
Lower Consolidation Level
Upper Consolidation Level
Final Consolidated ranking
All packages ranked together
Critical review
List and display packages ranked above the 60% cutoff
Review and rank together all packages below the 60% cutoff
Critical review
List and display packages ranked above the 70% cutoff
Review and rank together all packages below the 70% cutoff
Critical review
List and display packages ranked above the 80% cutoff
Review and rank together all packages below the 80% cutoff

Figure 7: Specific Illustration of Use of Funding Cut-offs to Limit the Number of Decision Packages Per Consolidation Level (Phyrr; 1973:84)


Activity A
Packages A1 A2 A3 60%
A4 A5
Activity B
Packages B1 B2 60%
B3 B4
Activity C
Packages C1 C2 C3 60%
C4 C5 C6 C7
Consolidated ranking
60% cutoff reviewed
Packages A1 A2 A3
Packages B1 B2
Packages C1 C2 C3 60%
Packages below 60% cutoff ranked in order of importance
Packages C4 C5 A4 70%
B3 A5 B4 C6 C7
Packages ranked at the next consolidation level with a 70% cutoff

The second approach is less desirable for top management should have a "gestalt" view of the total organization; the actual decisions are made at some lower level - say departments.

Two other procedural aspects of the ranking process need to be considered: (1) who should do the ranking, and (2) how should the ranking be done? (Phyrr; 1973:87). At the lower levels, individual administrators

could rank-order the packages while review committees are usually used at the top levels because of the need for broad-based expertise. However, a committee structure always requires more time.

A physical sorting process can be used to rank-order decision packages when the number is manageable, say less than 40. However, when the number of packages is over 40 and/or a committee structure is used it has been found that ranking based upon weighing (assigned by an individual) or voting (assigned by a committee) is an excellent approach. Phyrr (1973:90) identifies 3 basic voting alternatives.

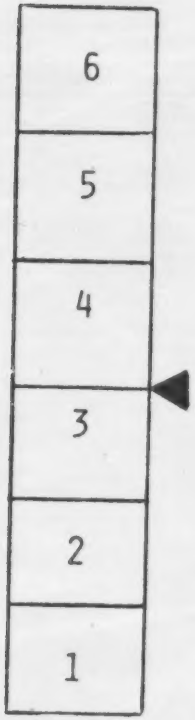
a. each member votes on a single scale, with the average or total points used to determine the ranking.

b. each member votes on several criteria with total points used to determine the ranking.

c. a combination of 1 and 2: 1 used for preliminary ranking and 2 used for detailed ranking around the cut-off level after it has been established.

The single scale vote approach could have a six point rating scale that would be applied against each decision package, as illustrated by Figure 8 on page 23. Figure 9 on page 24 illustrates the multiple criteria scale approach.

Figure 8: Voting Criteria Sample - Single Scale



PACKAGE SHOULD DEFINITELY BE FUNDED TO SATISFY MINIMUM "REQUIREMENTS" OR HAS A HIGH PROBABILITY OF SIGNIFICANT IMPACT IN TERMS OF BENEFIT.

PACKAGES HAVE SOME MUSCLE, BUT THESE WOULD BE THE FIRST PACKAGES TO CUT IF THE GOAL EXPENDITURE LEVEL WERE REDUCED.

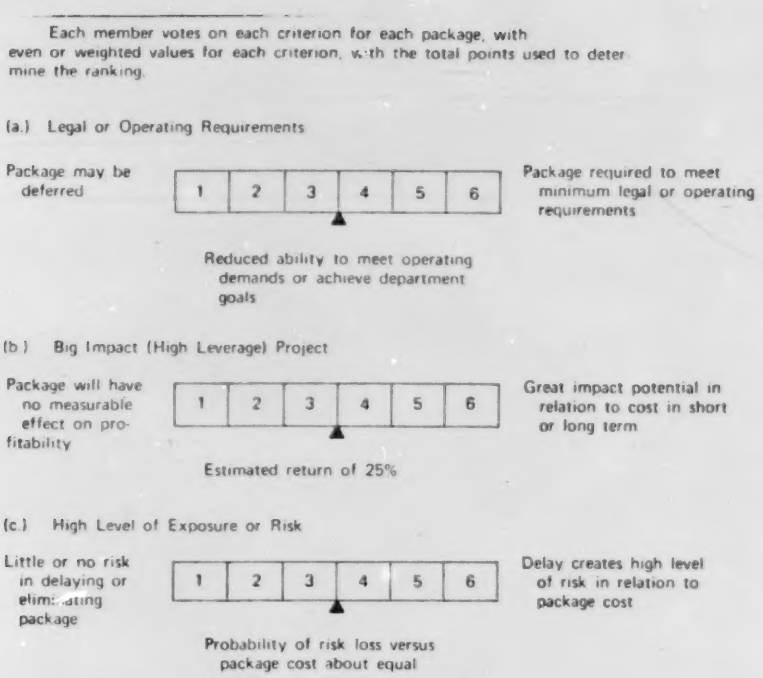
DECISION POINT: GOAL EXPENDITURE LEVEL *

PACKAGES HAVE SOME MUSCLE, AND THESE WOULD BE THE FIRST PACKAGES TO ADD IF THE GOAL EXPENDITURE LEVEL WERE INCREASED.

PACKAGES SHOULD NOT BE SERIOUSLY CONSIDERED GIVEN THE CURRENT EXPENDITURE GOALS.

* RECOMMENDATION: GOAL EXPENDITURE LEVEL - THE CURRENT EXPENDITURE LEVEL IS A GOOD REFERENCE POINT FOR DECISION MAKING, SINCE EACH MANAGER CAN EVALUATE IN HIS OWN MIND WHERE HE THINKS A NEW FUNCTION OR EXPANDED FUNCTION IS IMPORTANT ENOUGH TO BE VOTED 4, 5, OR 6, WITH THIS ADDITIONAL EXPENDITURE OBTAINED BY REDUCING OR ELIMINATING CURRENT FUNCTIONS.

Figure 9: Multiple Criteria Scale Voting Sample (Phyrr, 1973:92)


Each member votes on each criterion for each package, with even or weighted values for each criterion, with the total points used to determine the ranking.
(a.) Legal or Operating Requirements
Package may be deferred
1 2 3 4 5 6
Package required to meet minimum legal or operating requirements
Reduced ability to meet operating demands or achieve department goals
(b.) Big Impact (High Leverage) Project
Package will have no measurable effect on profitability
1 2 3 4 5 6
Great impact potential in relation to cost in short or long term
Estimated return of 25%
(c.) High Level of Exposure or Risk
Little or no risk in delaying or eliminating package
1 2 3 4 5 6
Delay creates high level of risk in relation to package cost
Probability of risk loss versus package cost about equal

Regardless of the size of an organization and the form of top management review, the decision package and ranking process form the foundation and backbone of budget analysis and decision making (Phyrr, 1977:7).

4. Preparing the Budget

The ranked decision packages provide all the necessary information to prepare the final budget. If the review resulted in reductions in any given decision unit, the package numbers are given. If an arbitrary general percentage reduction is given, then one needs only to eliminate those packages

of lowest priority. Therefore, the advocates of ZBB argue that ZBB provides all the information necessary for the preparation of the final budget.

SOME EXAMPLES OF ZBB IN OPERATION

One of the best ways to understand ZBB is to examine the concept in some of its operating environments. Hence, this section looks at ZBB in three U.S. states, one municipality and one school jurisdiction, which are:

1. Georgia State
2. New Jersey State
3. Texas State
4. Wilmington Municipality, Delaware
5. Greece Central School District, N.Y.

As well, this section views ZBB in McMaster University (Hamilton, Ontario).

1. Georgia State

- o regarded as first state to adopt ZBB
- o on March 13, 1971 Governor Carter instructed state agencies to utilize ZBB in preparing the 1973 FY requests
- o detailed instructions issued
- o slightly modified since but basic features still intact
- o decision units are by function (the function is the lowest program level at which a budget estimate is prepared). There are three tiers of budget decisions: (a) function, (b) activity, (c) departmental.
- o decision packages prepared for different various incremental efforts per function
- o each decision package has line item detail and performance measures
- o the levels of effort per decision unit required are:

  (a) minimum level (decision package #1 of at least 3)

- o minimum is lowest expressed in terms of cost and service below which it is unrealistic or not feasible to operate
- o no percentage limitation is imposed, but it must be below the current spending level
- o effect of terminating the service must be identified

(b) current level (decision package #2 of at least 3)

- o estimate of next year's cost, adjusted for inflation, or providing the current level

(c) Expansion level(s)(decision package number 3 of at least 3)

- o efforts for new or improved programs must be quantified
- o packages are then ranked, not by function but by activity
- o cumulative costs as a percent of current funding given
- o submitted up and ranked again
- o over the last 5 years the process has been simplified and paperwork reduced
- o forms redesigned to include more quantitative data on workload and program

2. New Jersey State

- o launched on July 22, 1974
- o N.J. was already using PPB techniques such as program categories and performance measures
- o purpose was to
  - (a) question the continued need for every program and activity, and
  - (b) rank order all programs and activities
- o three budget forms are used

- the first form requires at least six decision packages, predefined at the following levels: (Form 1):
  - (a) 0 percent
  - (b) 50 percent
  - (c) 75 percent
  - (d) 100 percent
  - (e) 125 percent
  - (f) over 125 percent
- each decision package must include:
  - (a) program objectives
  - (b) identify changes in laws
  - (c) specify effects of funding level
  - (d) expected performance
- on the second budget form: (Form 2):
  - (a) levels are priorized
  - (b) incremental levels identified
  - (c) cumulated levels given
- the third form (Form 3):
  - (a) past and future performance data is given for each priority level
  - (b) performance measures given in terms of output, efficiency and effectiveness

3. Texas State

- initiated for the 1976-77 FY
- decision packages (prepared by activity managers):
  - (a) objectives
  - (b) ways to achieve objectives

(c) costs and benefits

(d) performance measurement

(e) alternative accomplishment means

- program managers priorize activity decision packages and prepare decision packages for their programs
- effort levels defined as:
  - (a) minimum - not to exceed 90% of current
  - (b) level 2 - cannot exceed current $
  - (c) level 3 - cannot exceed 110%
  - (d) level 4 - those that are 120% and more

4. Wilmington Municipality, Delaware

- resident population of 80,000
- daily commuter influx of 60,000
- since 1960 the population has declined 17%
- 1976 operating budget was $34.8 million of which 9.1 million was an operating subsidy to the local school district
- strong mayor - council
- difficulties with previous budgets were:
  - a. insufficient information
  - b. existing levels assumed
  - c. no trade-offs
  - d. impact of change unclear
- environmental conditions were:
  - a. little or no growth of revenue
  - b. locked in union settlements of 5 to 7.5%
  - c. relatively fixed expenses consuming half of the available revenue

d. demand for new programs

e. aversion to tax increase

- process involves:

a. establishment of decision/budget units

b. 61 budget units prepared from 1 to 7 service levels--total of 197 levels (First level 50-60% of current)

c. each decision unit identifies alternatives, manpower, and costs (used quality-quantity variations)

d. each package priorized, revised, finalized and rank ordered

e. level of expenditure selected and bottom priorities dropped

f. all decision packages submitted to Mayor and Council (departure from normal practice)

5. Greece Central School District, Greece, N.Y.

- comprehensive process of functional budgeting, analyzing, reporting and planning called SCAT - School Cost Analysis Team--was implemented in 1976.
- SCAT is an integrated management approach which:

a. applies concepts of ZBB

b. incorporates a broad community based suggestion system

c. adopts accepted financial reporting practices, and

d. provides a sound basis for short and long term planning.

- some environmental conditions:

a. operating budget of nearly $30 million

b. about 1,150 professionals and support staff

c. 13,000 pupils

d. nineteen schools

e. budgets in N.Y. require resident voter approval

f. after several defeats of the referendum in 1975/76 decided to restructure budgeting process

g. recommendation came from CEAC (Community Education Advisory Council) which was concerned about 3 plebescite defeats in 5 years.

o ZBB in SCAT (School Cost Analysis Team)

a. The start from zero concept was rejected as being mind-boggling and highly impractical so it was decided to commence with the "business-as-usual"(current) level.

b. The standardized state accounting system did not provide a useful framework for functional budgeting and hence 150 decision units were identified (see Exhibit one in Appendix A: source is Brueningsen, 1976:57). Hence, a new accounting structure was developed.

c. A team of external management practitioners were utilized in the process (manager of corporate finance, from Kodak, comptroller from Tobin Packaging, former comptroller from the Rochester Diocese, professor from the College of Education, and a program manager from Xerox who was working with ZBB in Xerox).

d. Each decision package must be formatted (see Exhibit 2 in Appendix A.)

i statement of the program and goals

ii subjective benefits

iii quantitative measures

iv required resources

v required support services

vi identified constraints of "A" - legally required "B" required by contract and "C" local policy and discretion. (see exhibit 2)

vii a statement of alternatives

e. Starting level was "budgets-as-usual", hence the minimum number of decision packages per decision unit were

i maintenance level - continue present level of service

ii preferred level - program expansion, but not blue-skying nor wishful thinking

iii reduced level - an austerity or cut-back approach

iv minimum level - that which is absolutely legally required minimally.

f. Each budget level had to indicate how the same could be accomplished through alternative ways.

g. Used a school-community suggestion system for alternatives and as a result compile a "shopping list" of about 1,000 ways to reduce cost or improve efficiency.

h. Ranking of alternative decision packages was not necessary because the board established a budget objective through existing constraints and range of available alternatives.

i. For the 1976/77 FY the budget was trimmed by over $1 million without detriment to direct instructional programs or students--budget approved on first ballot.

j. Communication of budget information to all parties:

f. McMaster University, Hamilton, Ontario

- initiated in 1975-76 FY
- facing several financial constraints and inflation
- demand for high salaries
- faced a deficit of $2.7 million on a forecasted revenue of $40 million

- o only budget increases were critically examined under usual procedures
- o business office divided into decision units of accounts payable, accounts receivable, payroll, etc.
- o decision packages stated (a) objectives (b) operational and/or legal consideration and (c) current methods in detail (d) impact of reductions (e) cost benefit (f) alternatives (g) alternative analysis
- o higher level management involved lower level when decision packages were being re-ranked.
- o President's Budget Advisory Committee served as the top level review Committee and aided by eight Task Forces which were established to review administrative departments.

ASSESSMENT OF ZBB TO DATE

An assessment of the value of ZBB can be done in terms of potential benefits, advantages/disadvantages in operating systems and relative impact. Broadnox (1977:59-64) has identified four theoretically potential benefits: (1) capacity to reallocate scarce resources, (2) a methodology for dismantling the program (3) improved management information, and (4) clarity of policies.

A practical way to view the advantages and disadvantages of ZBB is to assess ZBB in its actual application. Hence the major strengths and weaknesses of ZBB are identified in the 6 illustrations given in the last section: first the ADVANTAGES:

New Jersey

1. Assisted decision makers in evaluating and comparing among competing demands.
2. Assisted in determining the most appropriate funding levels.

Georgia: G.S. Minmier (Schick, 1977:18) conducted a thorough evaluation of the Georgia experience and found that:

1. Development of a planning phase prior to budgeting,
2. Improvement in the quality of management information,
3. Greater involvement by lower management personnel in the budgeting process, and
4. ZBB cannot override the much stronger incentive to seek larger budgets and expanded functions BUT it can stimulate the redirection of resources within budgets and programs--encouraging the shift from less to more productive activities.

Texas: A careful appraisal of the initial application was conducted by the Budget Office:

1. Simply another procedure for structuring information in a rational manner so as to improve decisions.
2. Overwhelming agreement that current decision packages were useful--even though this is in conflict with ZBB principles, it appears that the current level packages are perceived to be extremely important.

Wilmington, Delaware

1. more information
2. more useful information
3. commitment to services rather than line-items
4. identification of all services
5. systematic priorization
6. involvement of all personnel, including council
7. concern for preplanning
8. priorities and program measures lead to MBO improvements
9. more effective control of resource allocation

Greece School District, N.Y.

1. identification of functional areas
2. answers questions such as
   a. Are we getting our monies worth?
   c. Where can we reduce the budget and cause the least negative effects?
3. identification of alternatives

McMaster University, Hamilton, Ontario

1. insights into operation of all departments (alone worth the time and problems)
2. line managers developed a tougher management approach (objectives, alternatives, etc.)
3. cost reductions achieved with out excessive negative impact or teaching and research.

The same six applications also encountered certain problems; some of the major DISADVANTAGES therefore, that surfaced were:

New Jersey

1. agency and staff resistance to change
2. lack of understanding
3. inadequate quality of some information

Georgia

1. Significant increase in time and effort - 10,000 decision packages in first year.
2. Inability to significantly affect the reallocaltion of scarce

resources (no evidence to suggest any shift because of ZBB). For example, in 1973, 1974 and 1975 each activity received at least as much as in the previous year.

3. Minimum level packages not thought to be useful to staff but central budgeters thought these useful.

Wilmington Municipality, Delaware

1. Expanded paperwork, time and effort (cost of budget increased 100%).
2. Difficult to change previous budget metality of starting from present.
3. Many complaints.

McMaster University, Hamilton, Ontario

1. paper work
2. time
3. priority statements unclear
4. priorization very difficult

The advantages and disadvantages observed in the above examples of practial application can more clearly be understood in a summary form. Hence, the summarized ADVANTAGES of ZBB are claimed to be:

1. achieve cost reductions with minimal negative impact
2. assists in trade-off comparisons
3. assists in determining appropriate support ($)
4. quality of information
5. involvement
6. prior planning
7. cannot override strong incentive to seek increases BUT stimulates redirection within budgets and programs
8. rational information

9. more useful information
10. better understanding of the organization and budgeting process
11. commitment to services not line-items
12. systematic priorization
13. improvements in MBO
14. identification of all services
15. more effective control of resource allocation
16. identification of alternatives
17. identification of functional areas

The DISADVANTAGES, in summary form are:

1. resistance to change
2. lack of understanding
3. inadequate quality of information
4. increase in time/effort
5. increase in paper
6. inability to shift resources significantly
7. decision packages, especially minimum, more useful to central budgeters
8. complaints
9. locked in to incremental budgeting
10. comparison of each program impossible
11. lack of instructions
12. catches some butterflies but stops no elephants.

The third way of assessing the value of ZBB is to look at the relative impact; five such analyses follow:

New Jersey

1. Budget increases amountedto only 1.8%, the lowest in 21 years (average annual increase in the 21 year period was 14.7%)--therefore, the impact is best when reducing increasing budgets; and not when increasing.

Wilmington, Delaware

1. Only 5 changes were proposed for cut-off below the determined expenditure level. After much debate about program and impact of reduction, it was decided to reduce all service levels by 0.1 percent.

McMaster University

1. eliminated the forecasted deficit of $2.7 million in less than two years without excessive negative impact upon teaching and research.
2. improved many support services
3. improved accounting system

Greece School District

1. reduced the 1976-77 FY budget by over $1 million without detriment to direct instructional programs or students.

Wildavsky Study (1975: 278-296)

Wildavsky conducted a comprehensive evaluation of ZBB in the US Department of Agriculture. Some of his findings were:

1. outcomes were not significantly effected
2. phenomenal paper blizzard
3. nothing approaching a comparison of every program was made--the ideal is impossible
4. lack of instructions and techniques
5. lack of time
6. only an internal exercise

7. voluminous documents, and

8. motivation was to serve the secretary, not search for wastes.

Interestingly though, Wildavsky suggested that there were several valuable unanticipated consequences of ZBB (perhaps because of the Hawthorne Effect):

1. higher interest in budgeting

2. more time spent on budgeting

3. involvement

4. although many said it was not useful to them, they thought it was useful to others (those who were in their position for less than 3 years found it useful)

In conclusion, Wildavsky claims that the time and effort of ZBB are not worth the benefits.

How About Private Organizations. A study of 54 private corporations (all in Fortune's 1,000 list) using ZBB, by P. Stonick in 1976 revealed the following assessment:

1. Change from prior years budget

12%	-10% or more
30%	- 5 to 10%
51%	+-5%
7%	+ 5% and more

2. Rating (%) of ZBB as a:

	Exc.	Good	Fair	Poor	Not Appr.
Tool to change the total budget level	28	46	20	0	6
Tool to reallocate resources	34	42	20	2	2

3. Overall rating (%) as a management planning and control system:

Excellent	28
Good	59
Fair	13
Poor	0
	100

4. Comparison with other systems:

Better	67%
Same	33
Worse	0
	100%

5. Assessment of ZBB in terms other than budget levels and reallocation revealed that:

	Exc.	Good	Fair	Poor	Not Appr.
Learn more about the organization	55	42	3	--	--
Manage overhead activities with more flexibility	20	54	23	3	--
Improve efficiency/effectiveness	18	58	18	3	3
Improve communications	16	47	29	3	5
Develop alternative methods of operation	15	46	36	3	--
Plan organizational changes	13	39	24	16	8
Evaluate staff performance	13	35	35	11	5

In summary the advocates of ZBB acclaim its virtues and overlook the problems; the adversaries acclaim its problems and disregard the advantages. To this writer, however, although the advocated potential benefits remain unproven, ZBB can be a powerful tool especially when utilized in an environment where economic constraints are the order of the day.

DESIGN AND IMPLEMENTATION CONSIDERATIONS

The decision to implement or not to implement ZBB should be made through a deliberate-rational decision process. A good deal of data gathering and analysis should accompany this decision. Some of the major data lines are:

1. budget audit
   (a) identification of strengths/weaknesses of present budget system
   (b) priorization of strength/weaknesses
2. analysis of present system

3. alternative techniques to improve present system
4. identification of environmental conditions
5. identifying optimal/satisficing solutions
6. yes/no decision

Assuming a "yes" decision, a ZBB design and implementation plan should be developed. According to Taylor (1977:41-45) there are six steps in designing and implementing ZBB:

1 Budget Audit - what are the strengths and weaknesses of the existing budget process?

2. Objectives and expectations for ZBB. Some of these are:
   a. cut budgets rationally
   b. reallocate by priority
   c. use of alternatives
   d. better information
   e. improved analysis
   f. planning/budgeting linkage
   g. program evaluation
   h. top management insights
   i. involvement (OD)
   j. communication (OD)
   k. evaluate capabilities of subordinates
3. Who are the major consumers?
   a. legislature
   b. expenditure
   c. time managers
4. Implementation strategies
   a. entire budget or only part(s)
   b. entire organization or only part(s)

c. pilot test or implementation

d. training

e. bottom-up or top-down

5. Linkage to existing management systems

a. PAB

b. PPBES

c. MBO

d. control

e. information

6. Technology and procedures to be employed

a. identification of decision units

b. type of analyses

c. forms (decision packages)

d. procedures (overall and ranking)

e. guidelines

f. timelines - budget schedule

g. instructions

h. training and

i. assistance

O'Neil and Manceri (1977:58) claim that "ZBB can be a useful tool to educators but at this point there is little hard evidence available because so few school districts are using it." It is its potential usefulness that makes the concept worthwhile for implementation. The advantage of ZBB over PPB is that its proven success lies in the "soft areas" of service and support. Implementation, in education circles, claim O'Neil and Manceri (1977:58) should be approached with caution. They (O'Neil and Manceri, 1977:58 and 63) further offer some suggestions for implementation in a

school setting:

1. Excellent bottom-up process (involves school level personnel).
2. Could be trialed in one department.
3. Elements or activities should consume at least 10% of a decision package.
4. Process should be about 10 weeks.
5. Time consuming in initial year--half in the following year.
6. Must be properly designed, managed and supported--4 major problems are:
   a. staff fears
   b. how to formulate decision packages
   c. how to rank
   d. training in ZBB
7. Ideal to apply to "troubled" areas, and
8. Feedback.

Phyrr (1973:25) identifies three general requirements for implementation as: (1) support from top management, (2) effective design of the system to meet user needs and (3) effective management of the system. Further, Phyrr (1973:26) suggests that three general problems are evident in the implementation of ZBB:

1. fears and administrative problems, and
2. decision package formulation problems
3. ranking process problems.

PPBES/ZBB RELATIONSHIPS

ZBB is viewed by this writer as an extension and advancement of PPBES. PPBES failed because it lacked a rigorous or specific method for processing the information; ZBB provides the procedural aspects for PPBES. Phyrr (1973: 149-153)

suggests that ZBB has overcome 5 critical gaps of PPBES:

1. PPBES focuses on what will be done, not how to do it/ZBB focuses on how to achieve an objective.
2. PPBES is a cost projection based upon long range planning/ZBB is a detailed evaluation of policy and alternatives.
3. PPBES does not provide an operating tool to implement the decision/ ZBB provides such a tool-the 4 steps.
4. PPBES does not provide a mechanism for evaluation of alternatives/ ZBB provides the mechanism to evaluate different levels of funding and the impact.
5. PPBES focuses primarily on new programs/ZBB forces the review of all aspects.

Further, Phyrr claims that not only are PPBES and ZBB compatible, but ZBB reinforces PPBES through (a) the use of the program structure, (b) issue identification, (c) special analysis, and (d) program plans.

SUMMARY

It appears that ZBB is most appropriate in a depressed economic environmental context and a public disillusionment with government programs. ZBB has experienced some infancy growth pains and historically has proceeded through a gestation period, an abortion, a reincarnation or live-birth and infancy. The"aborted" version of ZBB appears to be ludicrious, ridiculous and impractical, to say the least. The revised or reincarnated "practical" version appears to merit consideration. It is clear that the underlying assumptions of ZBB make it a useful approach that provides top management with flexibility and discretion in budgetary decision making.

It is during the critical ranking and review process that top management focuses attention on key policy issues; thereby resulting in improved policy clarification, implementation and realization.

Normally, planning should proceed the ZBB process. ZBB is a management approach that basically involves four key steps: (1) decision units, (2) decision packages, (3) ranking and (4) budget preparation. Some operating examples were studied--including ZBB in a school district in New York, that being in Greece. The problems, advantages and potential benefits were identified; the major advantages being in the area of resource allocation trade-offs, program evaluation, policy clarification and realization and information systems. The major disadvantages stated were time, volume of paper and resistance to change.

Some design and implementation considerations were stated. Finally, the relationships (perhaps somewhat obscure and biased) between PPBES and ZBB were given--the conclusion being that they are compatible and further that ZBB supports PPBES; the content and format of ZBB has been derived from PB while the three basic ZBB steps provide PPBES with a method.

CONCLUSION: SHOULD ZBB BE CONSIDERED BY CANADIAN SCHOOL AUTHORITIES?

ZBB is presently gaining momentum in Canada. For example, The Calgary Public School District #19 is fully implementing ZBB in 1980-some ZBB type modifications are being introduced for the 1979-80 budget cycle. As well, the British Columbia government recently announced that ZBB will be introduced into three ministries for the 1979-80 fiscal year (Edmonton Journal, March 1, 1978:A23). Other examples include MacMaster University, Royal Bank, Westinghouse, Bank of Montreal, City of Hamilton and North York General Hospital. ZBB is also becoming a favorite conference topic for various educational and business administrators. Consideration for implementation can be viewed from

three fronts; bandwagon, fraud and benefit. ZBB could be viewed as another bandwagon that has joined the reform parade of management innovations. In education we have had a host of innovations, many of which are passing fancies and some of which have lasting impressions. In order to market an innovation, it is often oversold, thereby increasing the chance of demise due to inflated expectations. Is ZBB being oversold? Can it meet its promises?

Another view of ZBB is that is is simply a fraud that is being perpetrated upon unsuspecting organizations and managers. Anthony (1977:82) argues that ZBB advertising constitutes "false and misleading advertising because the zero-base is impossible (only 1 instance - Georgia, now all are at the 80% minimal support level), every dollar cannot be justified, and is not workable" because of the horrendous amount of time and useless paperwork required.

The third view is one of actual benefit. The evidence to date suggests that ZBB is most powerful in public institutions at a time of tight financial constraints and public disillusionment. Do these conditions exist in Canadian educational environments? This paper looks at the Alberta scene as a case study.

The Alberta education financial situation is somewhat less buoyant today than the previous decade as witnessed by declining enrolments, escalating per pupil expenditures, imposed ceilings on supplementary requisitions and restricted increases in provincial funding. As well, the public concern for educational accountability has been with us during this time and more recently there has been "a back to the basics" mood in Alberta. Further, the recent court ruling over truancy at Three Hills (and the possible implications) could cause additional financial strains on some Alberta school jurisdicitions. Because of the present contextual environment of Alberta school jurisdictions, and the potential benefits, successes to date, and documented unanticipated consequences

of ZBB, this writer believes that ZBB should be strongly considered for implementation by Alberta school jurisdictions. If the same environment exists in other provinces then ZBB should be considered by them.

In conclusion, O'Neil and Manceri (1977:58) state that "ZBB can be a useful tool to educators" and it is its potential usefulness that makes the concept worthwhile for implementation. Further, Weischadle exhorts that "ZBB may have a beneficial effect on your schools." However, whatever you do, Cornish (1978) advises that since ZBB "...is still a babe in the woods", one should "PROCEED WITH CAUTION". This writer believes that if an organization is seriously considering the implementation of ZBB, then implementation should be approached with "cautious optimism".

Appendix A
ZBB In
Greece, N.Y.

Exhibit 1

GREECE CENTRAL SCHOOL DISTRICT
DECISION PACKAGES

Group	Code	Package Name
Board of Education	A1-1-010-0-00-0-000	Board of Education—Operation
	A1-1-020-0-00-1-000	Clerk—District Meeting
	A1-1-020-0-00-2-000	Clerk—Records
	A1-1-030-0-00-1-000	Finance—Treasurer
	A1-1-030-0-00-2-000	Finance—Auditing
	A1-1-030-0-00-3-000	Finance—Tax Collection
	A1-1-030-0-00-4-000	Finance—Insurance
	A1-1-030-0-00-5-000	Finance—BOCES Administration
	A1-1-030-0-00-6-000	Finance—Assessments, Claims, Etc.
	A1-1-030-0-00-7-000	Finance—Inter-Fund Transfer
	A1-1-030-0-00-8-000	Finance—Debt Services
	A1-1-040-0-00-0-000	Legal Services
Staff	A1-2-100-0-00-0-000	Superintendent of Schools
	A1-8-110-0-00-0-000	Community Relations
	A1-6-120-1-00-0-000	Personnel
	A1-7-120-2-00-0-000	Employee Relations
	A1-5-130-0-00-1-000	Accounting—Budget & Management
	A1-5-130-0-00-2-000	Accounting—General Accounting & Control
	A1-5-130-0-00-3-000	Accounting—Cash Control
	A1-5-130-0-00-4-000	Accounting—Accounts Payable
	A1-5-130-0-00-5-000	Accounting—Payroll
	A1-5-140-0-00-1-000	Pupil Accounting—Census
	A1-5-140-0-00-2-000	Pupil Accounting—Attendance
Instruction	A1-3-200-1-00-0-000	Instructional Management
	A1-3-200-2-00-0-000	Pupil Services Coordination
	A1-3-200-2-00-0-040	Pupil Services—Nurses
	A1-3-200-2-00-0-060	Pupil Services—Tutors
	A1-3-220-1-bb-0-010	Elementary Programs—Building Admin.
	A1-3-220-1-bb-0-040	Elementary Programs—Nurses
	A1-3-220-1-bb-0-060	Elementary Programs—Lunchroom Monitors
	A1-3-220-1-bb-0-100	Elementary Programs—K-6
		—Language Arts
		—Math
		—Social Studies
		—Science
		—Family Living
	A1-3-220-1-bb-0-410	Elementary Programs—Art
	A1-3-220-1-bb-0-460	Elementary Programs—Music/Vocal
	A1-3-220-1-bb-0-480	Elementary Programs—Music/Instrumental
	A1-3-220-1-bb-0-510	Elementary Programs—Physical Education

Exhibit 2

GREECE CENTRAL SCHOOL DISTRICT
DECISION PACKAGE

PACKAGE NAME

LANGUAGE ARTS K-6

CODE

A = LEGAL REQUIRE,
B = CONTRACT REQUIRE
C = BOARD POLICY

STATEMENT OF PROGRAM AND GOALS Language Arts at the elementary level focuses on the development of basic skills in listening, reading/literature and writing (includes grammar/usage, spelling, composition, handwriting, mechanics). The program is designed to assist each student to develop his language from an early listening and speaking emphasis, moving developmentally into reading and writing competencies. Assessment of individual student growth in reading is facilitated via a computer-based benchmark system consisting of twenty-six sequentially developed levels. The program relates directly to mission characteristics: 1) Basic Skills—identification and development in measurable terms the basic skills of reading, oral and written communication, listening, and reasoning. 2) The Instructional Program—reflects the development (in a three-year process) of curricula designed (1) to allow students to progress at their own rate, style, and need, (2) based on the interrelationships among subject and skill areas through practical application and practice of language arts skills in content areas.

RESOURCES REQUIRED	CURRENT YEAR	NEXT YEAR	CHANGE
DIRECT COSTS—			
SALARIES			
FRINGE BENEFITS			
EQUIPMENT			
SUPPLIES & MATERIALS			
CONTRACT SERVICES			
BOCES			
TOTAL			
SPECIAL FUNDING—SOURCE ___YES ___NO			

SERVICE REQUIREMENTS 1) Data Processing; 2) Print Shop (RAP & LA. Curric); 3) IMPC--RAP mastery disbursement, 4) Courier (RAP); 5) Procurement; 6) Transportation; 7) Testing & Evaluation.

BENEFITS

1. Provides instruction of students in basic skills essential to become literate, functioning individuals in our society.
2. Provides students with opportunities to be taught at their level, pace, and in sequentially developmental steps which are articulated K-12.
3. Provides the teacher with well-defined objectives and instruction materials which support the teaching of those objectives.
4. Provides the teacher with the tools (RAP) to determine each student's instructional needs and achievement—a pre-requisite for providing students with appropriate instructional programs.

QUANTITATIVE MEASURES	CURRENT YEAR	NEXT YEAR
All K-6 students (6,606) are instructed daily in language arts: K-3 = 2 to 3 hrs. daily 4-6 = 1½ to 2½ direct instruction daily, indirect instruction occurs via application of skills in all other content.		

ALTERNATIVES ATTACHED ☐ YES ☐ NO

PREPARED BY 53 Marj Lehman

DATE 11/26/75

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